

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1.-3. CANCELLED

4. (Currently Amended) A method of producing and hardening a toroidal disc for a traction drive device to which a power roller frictionally contacts during operation of the traction drive device, the toroidal disc including a circular steel body having a concentric toroidal surface, the toroidal surface having an operative angular range that extends in a radial direction by ± 25 degrees from a reference angular position which induces a speed change ratio of 1.2:1 of the traction drive device when operatively contacting the power roller, the operative angular range of the toroidal surface having a hardness of higher than 750 Hv at a depth ranging from about 50 μm to about 100 μm ,

the method comprising:

preparing [[a]] the circular steel body that has been subjected to a carbonitriding hardening/tempering process, the steel body having a concentric toroidal surface of the circular steel body being ~~which is~~ formed with a plurality of fine recesses each having a depth of smaller than 3 μm ;

turning the circular steel body about a rotation axis thereof;

pressing a ball member against the toroidal surface with a pressing force that is smaller than 2000N; and

moving the ball member on a given angular range of the toroidal surface in a direction perpendicular to the rotation axis of the circular steel body while pressing the ball member against the toroidal surface with the pressing force.

5. CANCELLED

6. (Previously Presented) A method as claimed in claim 4, in which a mean contact pressure with which the ball member contacts the toroidal surface is a value ranging from about 2.5 GPa to about 5.5 GPa.

7. CANCELLED

8. (Currently Amended) A method as claimed in claim 4, in which the given angular range of the toroidal surface extends in a radial direction by ± 15 degrees and 10 degrees from ~~[[a]] the reference angular position which induces a speed change ratio of 1.2:1 of the traction drive device when operatively contacting the power roller.~~
9. (Original) A method as claimed in claim 4, in which the given angular range of the toroidal surface is formed with the plurality of fine recesses.
10. (Previously Presented) A method as claimed in claim 4, in which during radial movement of the ball member on the given angular range of the toroidal surface of the toroidal disc, the ball member is urged to contact the toroidal surface at substantially right angles.
11. (Original) A method as claimed in claim 4, in which the ball member is constructed of silicium-nitride, ceramic, artificial diamond or hard metal.
12. (Previously Presented) A method as claimed in claim 4, in which a rotation speed of the toroidal disc about the rotation axis at an angular point where the ball member contacts the toroidal surface is controlled to a value ranging from about 100 m/min to about 350 m/min, and in which a process pitch of the ball member per each turning of the toroidal disc is controlled to a value smaller than 0.3 mm.
13. CANCELLED